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RUDOLF VIRCHOW.

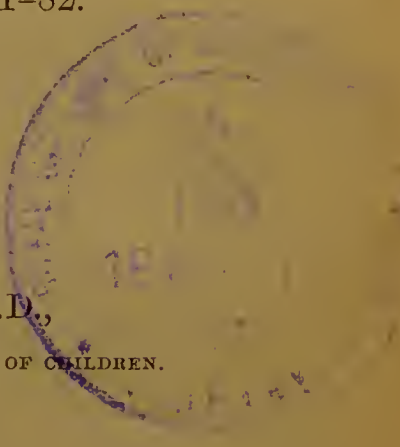
AN ADDRESS,

INTRODUCTORY TO THE COURSE OF LECTURES
OF THE TERM, 1881-82.

BY

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those who look for theirs among the best and most perfect.

Rudolf Virchow was born on October 13, 1821, in a little Pomeranian town—Schivelbein—in Northern Germany. In 1843 he graduated in medicine at the University of Berlin. In 1846 he was made prosector of the Charité Hospital, and controlled in that position the whole anatomical material of that great institution. His facilities he utilized at once in delivering courses of lectures on the subject of pathological anatomy. In 1847 he was appointed a regular lecturer in the University. In the same year, together with Reinhardt, who died in 1852, he founded his *Archiv for Pathological Anatomy and Physiology and for Clinical Medicine*, which has since completed its eighty-fifth volume.

In 1848 the Government sent him to Upper Silesia to study the typhus fever begotten by the misery and starvation of a vast population. His report was a masterpiece, containing close observations both of medical and social facts, highly valued by the profession, and, like his later book on the misery in the Spessart Mountains, by those in power and responsibility.

In 1849, together with Leubuscher, who also died young and too soon, like Reinhardt, he edited the *Medical Reform*. The ideas proclaimed by him, and his participation in the liberal tendencies of the revolutionary movement of 1848 were disliked by the Government. He was dismissed from his public positions. But the medical societies of the city were so unanimous in their efforts to retain him that he was reinstalled; *for there is, after all, ONE force* more powerful and influential than swords and cartridges, even in soldier-stricken Germany, viz., public opinion. Still he did not remain long in Berlin, but accepted the Chair of Pathological Anatomy in the University of Würzburg, which he held until 1856, when he returned to Berlin in the same capacity.

Before he left Würzburg, he published his "Collection of Contributions to Scientific Medicine" (Frankfort-on-the-Main, 1856). His celebrated papers

on "The Movement in Favor of Unity in Scientific Medicine," first published in 1849, head the list. I shall simply mention the titles of the rest in order to recall to the older gentlemen in this audience the great revolutions in physiological and pathological knowledge which have taken place in our lifetime. There are his essays on "The Physical and Chemical Properties," the "Metamorphosis," the "Origin and the Coagulation of Fibrine," all of them written in 1845 and after. There are his celebrated papers on "White Blood-Corpuscles" and "Leukæmia," dated 1845 and after, and his five hundred pages on "Thrombosis and Embolism," "Inflammations of Blood-Vessels," and "Septic Infection," dated from 1846 to 1853; also "Contributions to Gynecology," with papers on the "Puerperal Condition" (1847); the "Formation of the Placenta" (1853); "Uterine Flexions" (1850); "Prolapse of the Uterus" (1846); and "Extra-Uterine Pregnancy" (1850-56); on the "Elimination of Uric Acid in the Fœtus and Newly Born" (1846); "Congenital Hydronephrosis" (1854); and on "Apoplexy in the Newly Born" (1850); "Contributions to the Pathology of the Skull and Brain," which contain papers on the "Granular Appearance of the Walls of Cerebral Ventricles" (1846); on "Cretinism" (1851 and 1852); on the "Development of Cretinism" and "Cranial Deformities," on the "New Formation of Gray Cerebral Substance" (1851); and on "Senile Involution of Flat Bones" (1852); finally, a "Paper on Cancroids and Papillomata" (1850).

About the same time he was active with other problems. The "Collection of Treatises connected with State Medicine and Epidemiology" (Berlin, 1879), contain a number of papers written at that time. The two volumes treat in scores of different articles, written between 1848 and 1879, on subjects connected with public hygiene, reform of medicine, epidemics and endemics, statistics of morbidity and mortality, hospitals, military medicine, cleaning of cities, school hygiene, criminal law, and forensic medicine.

However, when Virchow's name is mentioned, it is

customary to think of him first as a great discoverer on the field of pathological anatomy.

Pathological anatomy is that part of pathology which treats of the origin, development, and nature of such changes in the solid and liquid parts of the body as constitute disease. The changes most thoroughly and profoundly studied, were, in the beginning, the gross and macroscopical, afterward the morphological ones, inclusive or exclusive of pathological chemistry, which is still younger than pathological anatomy proper. If I speak of origin, development, and nature of changes, I characterize the science as it is to-day. For neither Theophil Bonetus, who, in 1675, collected the three thousand post-mortem examinations recorded for two thousand years past, nor Morgagni, in his celebrated book on "The Seats and Causes of Diseases studied Anatomically" (1761), nor Bichat (1801), with his attempts at studying the diseased tissues, nor Aloys Vetter (1803), in his "Aphorisms from Pathological Anatomy," nor the first prospector, Biermayer, of the Allgemeine Krankenhaus, in Vienna—founded by Emperor Joseph, *Saluti et Solatio*—nor his successor Wagner, considered anything but the completed changes of the organs. Wagner's successor in the place, which was founded on the 26th of June, 1812, was Carl Rokitanski.

To estimate at its full value the influence exerted by *him*, let us consider the facilities for diagnosis at those times by choosing an example from the large class of fevers. There were catarrhal fevers, with the symptoms of a slight catarrh prevailing; when muscles or joints ached, the fever was catarrho-rheumatic or rheumatic; when the gastric symptoms prevailed, it was gastro-catarrhal or gastro-rheumatic; with a yellow tongue and pain in the right epigastrium, it was bilious, or gastro-bilious, or bilious-rheumatic; with prevailing headache or delirium, it was gastric-nervous, or bilio-nervous-rheumatic. There was no end of complication of terms, just as little as there can be an end to the complication of symptoms. That was a time in which nothing better could be done. Most diseases

were estimated from the nature of either the subjective or the most superficial objective symptoms of the pulse, the tongue, etc. It was exactly the period in which even the Hahnemannian system, school, sect, was just as easy of existence as any other system, school, sect, or self-styled scientific silliness. Rokitanski's great function was to find, as Andral had done shortly before him—to proclaim louder and more effectually than Andral ever succeeded in doing, that disease meant a change of structure and not of sensations and symptoms, and to point out, as Virchow happily expresses it, "a number of natural and easily recognizable types of disease." If I call your attention, by a simple example, to typhoid fever, which Rokitanski installed as an anatomical entity, instead of the nervous, and bilio-nervous, and gastric, and what-not fevers, you have at once an instance of the blessing conveyed by one great man on both the anatomist and the physician. He proved that the most various symptoms can depend on the very same or similar anatomical changes, and could prove that sometimes the same or similar symptoms might depend on different conditions. Thus, the similarity of many symptoms in typhoid fever and acute tuberculosis gave rise to many errors, many studies, until Skoda's skill and genius solved the grave problem of differential diagnosis. To treat of Rokitanski's merits fully is not appropriate to-night. His place in the history of medicine is secure. But still he will not appear—nobody will—as the last and unimpeachable judge in all matters anatomical and histological. On the contrary, his labors, as laid down in the first volume of his pathological anatomy, were undertaken, and in part finished, during the time in which Schwann first found all animal tissue to consist of cells. Thus, the histology even in his *second* volume (1846) is of inferior character. This is the first defect. His second error and that of his school is the assumption of humoral pathology in a somewhat new shape. The mixture (crasis) of the blood, engendered by the chemical examination of the blood by French authors such as Andral and Gavarret, was consid-

ered the main cause of many general, constitutional, or feverish diseases. The third great mistake of Rokitanski was this, that he felt convinced, and acted upon the conviction, that *his* special branch of pathology contained everything worth knowing in medicine. Remember, however, *he* lived in the dissecting-room; remember that from November 1, 1817, to October 8, 1878, seventy thousand and eighty-seven post-mortem examinations were recorded in Vienna. If you do, you will understand, and, though you deplore it, pardon the one-sidedness with which he considered that his efforts were everything required, not only for the theory, but for the practice of medicine. He found organs destroyed, or changed to such an extent that life was incompatible with that destruction or those changes. Where was the remedy which could have restored to health the organ which had caused death? *Non possumus*. Impossible. Thus he became the intellectual head of the so-called school of Vienna, which, while it increased rapidly the anatomical knowledge and differential diagnosis of the conditions of diseased organs, threw up its hands in despair when the living patient clamored for relief and recovery.

Thus, the three great defects or errors of Rokitanski and his school were: ignorance and regardlessness of histology, the clinging to humoral pathology, and the therapeutical nihilism originating in Vienna and infecting a large portion of the practitioners of the world. Let us now turn to Virchow to discover how he dealt with these defects, errors, and difficulties.

Before and about the time when Rokitanski worked and wrote, and Virchow prepared to commence his career, medical science in Germany was by no means independent and self-governing. There was no country in Europe in which observation and regard for facts, and facts only, was less esteemed than in Germany. England had enjoyed a predilection for pathological anatomy since John Hunter; Carswell had studied the elementary forms of morbid processes in his pathological anatomy (1833); physiologists such as Bell and Marshall Hall had

added to the stock of positive knowledge ; great physicians, such as Bright, Abercrombie, Hope, Williams, and afterward Stokes, enriched special fields of pathology. France lived through its most brilliant medical career. Never before, or after, have more illustrious, sober, and painstaking men worked in the same field with more success than those who sustained French medicine up to 1840 in its high rank. Bichat, Bayle, Dupuytren, Laennec, Cruveilhier, Rostan, Chomel, Gendrin, Bretonneau, Andral, Louis, Billard, Piorry, Magendie, and many others, placed French medical science far above the level of any other country. Meanwhile, German medicine was controlled by what was called philosophy, and mainly by the so-called philosophy of Nature. The only great philosopher of the end of the eighteenth century was no longer appreciated or understood. Immanuel Kant, with his clear intellect, his unbiassed judgment, his mathematical training and scientific method, was forgotten or misinterpreted. One hundred years ago this year, his "Criticism of Pure Reason" made its appearance. This very year the orthodox churches of all sorts of denominations have claimed this scion of natural facts, of mathematical problems, this personification of pure reason and unfettered logic, as their own, in this very city of ours. We need not wonder, then, that neither Fichte, nor Schelling, nor Hegel, nor even Hegel's greatest pupil, Feuerbach, followed the road opened by the unsophisticated, shrewd, far-seeing, untrammelled genius of Kant. Under the influence of the German philosophy of that whole period, after Kant, which has been so unintelligible that it was called profound, and so abstruse that it has procured for the whole German nation the title of the people of thinkers, everything in medicine not accepted because it was old and traditional was a matter of speculation *a priori* only. The bases of speculation were premises construed by reasoning not founded on facts ; by theories not built on experience, far less on experimentation. Both facts and experimentation were claimed by Virchow as the only admissible foundations of scientific medicine, no matter

how long it would take to collect them or to establish it. At the same time he was perfectly well aware that the literature of the last two thousand years contained a great many available points; nobody ever was more honest in collecting material and giving credit. Every one of his books, orations, speeches, essays, lectures, teems with literature carefully collected and critically judged, and proves his appreciation of the necessity of historical studies. As the organism of the human body cannot be understood without the knowledge of its gradual development, thus the present condition of medicine, or the present condition of a doctrine, cannot be appreciated without the history of the labors spent on its gradual completion, no matter whether it was obtained by uniform progress, or, what happens much more frequently, by alternations of progress and retarding relapses. For the history of human progress is, in part, the history of errors.

The young student cannot possibly imagine, without historical studies, the condition of our knowledge as late as thirty or forty years ago. Many of the distinguished men here assembled—many of your celebrated teachers on whose lips hang your eager eyes, and whose every word is cautiously remembered by willing ears, lived and studied in a time when capillaries were not known to be true vessels with a wall of their own, when the distribution of the peripheric nerves was not even believed by the most poetical imaginations, when the action of organic muscular fibres, with its universal influence on the function of every organ, was not deemed a possibility, and trophic nerves were not even dreamed of.

The first opposition to the influence on medicine of the so-called philosophy of nature, was made by "rational" medicine and the "physiological" school of medicine. It was formed by such learned and ingenious men as Wunderlich and Roser; it controlled the minds and influenced the action of many good men in the profession a number of years. At that time, and long after, pathology was acknowledged as only a part of physiology. At all events

it had no independence of its own. Pathology was an appendage of the natural sciences then recognized. *The emancipation of pathology*, its rise into the number of independent sciences, with, *in its turn*, its fertilization of anatomy and physiology, dates from April, 1847, when Virchow wrote on the *standpoints in scientific medicine*, in the first volume of the *Archiv for Pathological Anatomy and Physiology and for Clinical Medicine*. At that time he wrote as follows :

"We ought not to deceive ourselves or each other in regard to the present condition of medical science. Unmistakably, medical men are sick of the large number of new hypothetical systems which are thrown aside as rubbish only to be replaced by similar ones. We shall soon perceive that observation and experiments only have a permanent value. Then, not as the outgrowth of personal *enthusiasm*, but as the result of the labors of many close investigators, pathological physiology will find its sphere. It will prove the fortress of scientific medicine, the outworks of which are pathological anatomy and clinical research."

Five years afterward he could say : "The scientific method of medical research is firmly established. It is not my merit to have discovered it. Without me it would have been found, and the new trail would have been followed. But I trust that the battle against the existing mixture of arbitrary rationalism and gross empiricism, fought by the *Archiv*, in which I aided by the introduction of genetic investigation, must have contributed much in procuring new aims for pathology."

You remember that, but little more than forty years ago, Schleiden discovered the cell to be the elementary basis of the vegetable tissue. Schwann recognized the same element as the foundation of the structure of all animal tissues. A long series of observations and experiments convinced Virchow of the continuous propagation and proliferation of cells within the individual. After five years of hesitation he published the first preparation for, or introduction to, his cellular pathology, in the fourth volume of his *Archiv*, and another contribution

to the same, three years afterward, in the eighth volume.

He proved, and all our experience proves, that life requires a special formation to manifest itself, and certain conglomerates of substance. These conglomerates are the cells and their compounds. Like the individual in its totality, the cell in its turn is the physical body with which the action of mechanical substance is connected, and within which the latter can retain its functions which alone justify the name of "life." In the normal state of this conglomerate it is mechanical substance which acts, and acts only on chemical and physical principles.

The pathological process within the elements, according to cellular pathology, is as follows: a living cell is acted upon by something outside. The latter works a mechanical or chemical change in the cell. This mechanical or chemical change is disorder or disease. If an action or reaction take place in the cell through that cause, the change is called irritation, the cause irritant. If no reaction take place, there is a mere lesion, or perhaps a paralysis. The same cause may act as either an irritant or a simple lesion, or be a source of paralysis. The difference of the results depends on a difference in the condition of different cells. This difference in the condition of the cell is, or rather forms, its predisposition.

Cellular pathology was intended to demonstrate the cellular nature of all vital processes, both the physiological and pathological. Thus, in contradistinction to the humoral and "solidar" (or neuristic) theories handed down from almost prehistoric times, the unity of life in everything organic was claimed as a demonstrable fact, and the minute mechanics and chemistry of the cell were placed in victorious opposition to the course explanation based on the mechanics and chemistry of the compound mass. With the improved instruments, and by means of the newly established principle, "all medicine got nearer the natural processes by at least three hundred times" (Virchow).

All medicine; for it is a peculiarity in all of Vir-

chow's researches and conclusions, that none is without its immediate results on the theory and practice of medicine, even on diagnosis.

Diagnostic powers have increased with the growth of positive knowledge. Diseases become recognized as local anomalies in the same degree that the old humoral pathology, first objected to by Vesal and Paracelsus, was finally undermined in its position as the general explainer of physical disorders. One hundred years ago the diagnosis of most local diseases was a very imperfect one. A fever with dyspnoea, with cough or without it, was a thoracic fever—a pulmonary fever. When Morgagni had published his "*Seat and Causes of Diseases*," and Laennec and Dupuytren had developed more proficient means of diagnosis, the disease was sought for and found in organs—even in parts of organs. A pleurisy was diagnosed from a pneumonia, a pneumonia of the right from that of the left side, of the upper from that of the lower lobes. Bichat, though he could not prove it, yet insisted even upon the necessity of diagnosing the diseases of the several constituent tissues.

Virchow's cellular pathology is claimed by him as the consistent execution of the principles and postulates of his predecessors. The localization of disease is taken as a necessity. It is looked for in the smallest composing elements—the cells, for there is no organ but consists of cells or cell-production. Blastoderma, protoplasma, are not characterized as something independent, as organisms by themselves, no matter whether they be considered to be the changed condition from the blood, as the older writers would have it, or the shapeless, amorphous mass of the recent authors. The smallest organism we know of, and which has an independent action and a life of its own, changing under the influence of external irritants, is the cell. To fix the disease in a cell, or a group of cells, is the finest localization possible. As a rule, we have to deal with a group of cells, like the chemist, who works with and on a group of atoms.

But not only does the practitioner enjoy the benefit

of a diagnosis and prognosis based upon the knowledge of local organic alterations, but his therapeutics also have undergone important changes. They, again, are mostly due to more correct observations, and mainly to the experimental method which has been generally adopted these ten or fifteen years, in the study of the effects of medicines on the animal system or organs or tissues. Therapeutics have become more and more local. The hypodermic method has taught us that the local effect of a narcotic is so much more distinct when the remedy is applied to the affected part. Strychnia, injected into a paralyzed limb, a deficient sphincter ani, or near an anæmic amblyopic retina, is much more powerful than when given internally. Relations between certain organs and certain remedies have been discovered. Quinine has been found to affect white blood-corpuscles and blood-vessel nerves; ergotin has its specific action on unstriated muscular fibres; atropia on the intestinal ganglia and on the iris; eserine, calabar are justly credited with local effects. We have remedies with specific effects on the muscle, such as salicylic acid; on the nerves, on the brain or spinal cord; we use the faradic and continuous currents for local purposes; influence local changes, pains, anomalous functions by cold, heat, moisture, contra-irritants; even remedies known for their general effects alone are used for the purpose of reaching local changes. For not only is mercurial plaster used for the purpose of dissolving local indurations, mercury is given internally for the purpose of influencing local gummata; iodine in order to remove local periosteal swellings, or chronic local adenitis. By becoming experimental, therapeutics have become sound, not only for the benefit and in the interest of diseases, but also of surgical interferences. These have never been rendered so safe and innocuous by all the accumulated experience of justly celebrated operators, of justly condemned wars, as by the theoretical reasoning of a living English surgeon, whose name is on the blessing lips of every modern physician.

But cellular pathology does not claim to be a *sys-*

tem which contains everything, *but a principle*. Thus far, every new discovery of pathological facts has found a ready explanation by it and its methods. The changes worked in and by white blood-cells, the transmutation of epithelial cells into benign results or malignant growths, the influences, real or imaginary, worked by bacteria, have but strengthened its plausibility. If there be a pathological entity, this entity is the cells in a state of disease. Despite the multifariousness of the vital processes in different organs, life is—no matter whether the cell-group, the organ, the individual, well or sick, are concerned—one and the same, and depending on the same and uniform action of the independent cell.*

The three volumes on *morbid tumors*, published between 1863 and 1867, are a work which might have filled the lifetime of a great student and thorough pathologist, and perpetuated his name in the annals of medicine. Never before was sarcoma treated of so extensively and monographically. Never before was the whole literature of the subject searched with so much knowledge and conscientiousness. The etiology, development, and prognosis of morbid tumors were at last intelligibly discussed on the principles of cellular pathology, while even therapeutics were not neglected. The chapters on scrofulosis, tuberculosis, and syphilis, though the subjects were treated of in many, perhaps too many publications previously, exhibit new researches, new results on every page. The congenital deformities are always described in relation to the embryonic development of the parts, partly as arrests of development, partly as the results of inflammatory action. And not the least beauty of the great work is the fact that the material belonging to medicine and surgery, superficial and deep-seated organs, ophthalmology, dermatology, and gynæcology, is treated of under common and uniform points of view. Thus, as Virchow has proclaimed the unity of life under the most manifold

* See Virchow on the Essence and Causes of Disease, in his *Archiv*, vol. lxxix., in regard to many of the above statements.

manifestations, he facilitates the knowledge that, after all, the specializing tendencies of modern medicine, natural and necessary though they be to a certain extent, admit of correction and limitation.

The "Investigations on the Development of the Basis Cranii in its Healthy and Morbid Condition, and its Influence on the Shape of the Skull, the Formation of the Face and the Structure of the Brain" (Berlin, 1857), are, as it were, a continuation of the essays alluded to among the contents of the "Collection of Treatises." They have been fruitful for anatomy, psychology, and pathology. The two works have yielded the anatomical basis of my own papers on the pathological and diagnostic importance of the premature closure of the cranial sutures and fontanel (1858 and 1859) and of many more important additions to the literature of science. For himself, these studies have been of the greatest importance also. On the base created by him, his main predecessors in this field being Leuret and Gratiolet, and Huschke, he has merged into his anthropological studies, foremost among which is his book on "Some Cranial Peculiarities of Lower Human Races" (1875), and "Contributions to the Physical Anthropology of the Germans" (1876). Before these publications, however, saw the light, his cranial studies led him into palæontology and archæology. From the beginning of the existence of the Anthropological and Archæological Society of Germany, he was a member—in the second year its president. Without being able to follow him in all these studies, I lay stress only on the fact that they are by no means adverse or foreign to strictly anatomical and medical studies. The connecting link is sufficiently clear, though the literary notes I have given must, unfortunately, be but too short. His paper on prehistoric tombs, and many others, in part published in an anthropological journal, prove at the same time his varied interests and his mental powers, enabling him to combine such a variety of studies and occupations.

Still, his main labors have been spent on pathology and subjects connected with pathological anatomy. His papers on thrombosis and embolism alone

would have immortalized him. They acted like a new revelation, by which a host of pathological occurrences and processes, formerly not understood, became intelligible.

The number of his other contributions to pathology is large. I remind you of his investigations on caseous and tubercular degeneration, and on diphtheria. What our Dr. Billings lately said in his London discourse is certainly true. For pathology we do look to Germany—he might well have said, to Virchow and his pupils. Never can too much credit be given to him—never ought he to have been compelled to express himself as follows:

“For years,” he said lately, “I became accustomed to the fact that others utilize my labors. I complained of that in 1856, and have more reason now. Many pupils who learned the new results of my researches in my lectures have not always remained conscious of the source of their knowledge, and thus they have not always been in a condition to give me due credit in their publications. I do not propose to attribute that to ill-will in every case. We all live in motion and turmoil, and are the recipients of much which, without recalling the giver, we consider our own. Whoever has gathered around himself many pupils through many years, must expect that his own thoughts may return to him from afar.”—Preface to *Ges. Abh.*, etc. (Berl., 1879).

The first university establishing a full chair of pathological anatomy in Germany—Vienna not counted—was Würzburg. There and in Berlin he taught hundreds and thousands, and educated the men who were to occupy the chairs of pathological anatomy in the other universities. Rudolph Mayer, Rindfleisch, Recklinghausen, Bezold, Cohnheim, Grohe, Klebs, Ponfick, and many others owe him their opportunities and their places. Since, and through him, the appearance and working of German universities have greatly changed. Through this whole long period he has worked steadily, and always more efficiently than noisily. His not rushing into print with every little observation has now and then raised the doubts of some of his former pupils, who

would be gladly considered his peers, whether he worked at all. This doubt has even been expressed publicly, and, in regard to some points, he has been attacked because of his alleged want of progressiveness and thoroughness. Such is the case, for instance, in regard to the modern parasite theories of infectious diseases, and to Darwinism. Let us inquire.

Berzelius and Liebig developed the theory of chemical catalysis to such an extent that not only was organic chemistry enriched by it to a considerable degree, but the symptoms of infection (not, however, those of contagion) found a satisfactory explanation. Still, at that time, in 1854, Virchow's essay, in the first volume of his *Pathology and Therapeutics*, on parasitic plants, gives sufficient proof of his interest in and knowledge of the subject. A special paper of his, in the ninth volume of his *Archiv*, in 1856, demonstrated the botanical nature and classification of some forms of parasites to which an important part in nosology was to be attributed. At that time it was when he invented and first used the term of *Mykosis*, which has been generally accepted since.

Davaine in 1854, and Pollender, in 1855, found in anthrax the parasite which has since been given the name of *Bacterium anthracis* Cohn. Brauell's papers on the same subject appeared in the eleventh and fourteenth volumes of the *Archiv*, and were the forerunners of an immense literature which has since, in the *Archiv*, other journals, and independent publications, assumed vast proportions. In Virchow's hospital division it was, where Obermeier, in 1873, found the spirochæte in the blood of relapsing fever. Again, it was Virchow who, when travelling in Norway at the request of the Swedish Government, for the purpose of studying lepra, insisted upon the necessity of paying more attention to the dietetic basis of the disease, particularly to the fish eaten in large quantities. He has been severely reproached for not finding the bacillus lepræ, which, after the preparatory labors of four years, has been finally discovered by Armauer Hansen, twenty years after-

ward.* That very reproach proves that everybody expects everything of him, and sometimes too much. Now, the discovery of every sort of possible and impossible parasites is the regular order of the day, and has been for many years. On this side of the great water it has been Salisbury who has sharpened the appetite for numerous and uninterrupted discoveries of the kind. Every disease, every microscopic lens, every craving for notoriety, swelled the supply; endless was the number of new names, never was Greek dictionary more diligently consulted. Among the last diseases, in which Klebs and Crudeli claim to have found vegetable parasites which at once are taken to be the very causes of the same diseases, are intermittent fever and rheumatism. Here again, Virchow has been reproached for not publicly accepting the bacilli of malaria and rheumatism. The very men who insist upon Virchow's incompetency in regard to what they consider as the only basis of the nosology of infectious and epidemic or endemic disease, still appear to address every paper they write, every little observation they publish, to him. He is expected to repeat the experiments at once, appreciate and praise the results, and come to the same conclusions. If he does not, he is incompetent. One of his best known, but not best deserving, former pupils and assistants, is Klebs, but lately an essayist before one of the London Congress sections. He appears to have proved to his entire satisfaction that his poor master ought to be his attentive pupil. Among other novelties he has found that cellular pathology is incompatible with the new gospel of the parasite theory in regard to infectious diseases. Let us hear what Virchow himself has to say about this accusation (*Archiv*, vol. lxxix., p. 209, 1880): "Klebs has placed the whole dispute on a wrong basis. Vegetable and animal parasites *are* among the causes of diseases. Their place is in *etiology*, and therefore it is easily conceived that, as Klebs expresses himself, they found no place in my cellular

* *Archiv*, vol. lxxix., l. c.

pathology. There it was not any more my domain to offer an extensive paper on parasites, than it was to treat of traumatic injuries and corrosions. In my cellular pathology I meant to demonstrate the changes which take place in the elements of the organism in the general forms of disease. Thus, I meant to build up a theory of the essentiality of disease. Specified causes were mentioned only as examples—for instance, intoxication; and though but briefly alluded to, parasites have not been entirely overlooked. Cellular pathology never meant to be a general pathology. If that were the case, certainly etiology would have found its place in it without abridgment.”

Virchow has often been blamed for reserving his opinion, or rather not expressing it at once in favor of those who fain would have availed themselves of his approval of their rapid strides in discovery and unprecedented quickness of conclusion. We are all probably in favor of judging slowly in regard to assertions which require confirmation. For to what extent hastiness, coupled with gentle ignorance, can prove dangerous, Professor Klebs has shown but lately. In a recent number of a European journal, I find, under his name, the description of a cooking-apparatus, which is credited with keeping bacteria out of the milk which is to be boiled in it. Klebs is quite enthusiastic over it, because, as he asserts, now that bacteria can be kept out of cow's milk, no summer diarrhœa has a chance to develop itself. For summer diarrhœa is all at once, according to him, the result of millions of bacteria in the intestines of the babies, the said bacteria being the same which are found in the decomposing cow's milk. And how does he prove this sweeping assertion? Very simply indeed. While the babies had diarrhœa, he found the bacteria in the fæces, and thus he demonstrates that the diarrhœa is the result, and the only one, of the presence of bacteria. If, however, the Professor had examined the fæces of healthy babies, he might have counted the same number of millions of bacteria. The wise omission of such an examination saves his theory. Thus, if it be true

that a little knowledge is a dangerous thing, I am afraid that a little ignorance is just as dangerous.

The parasite theory is not yet a scientific system. In most of its claims it is not yet sustained. Many alleged discoveries of characteristic disease-germs have seen the light in a few years, and disappeared in utter darkness. In regard to the whole question, while anxiously and willingly waiting for further facts which would simplify the pathology of infectious and contagious diseases, I still maintain, as in the preface to my "Treatise on Diphtheria" (1880), the verdict "Not proven."

Another point which has been raised against Virchow is his hesitancy in accepting not only what has been called Darwinism, but at the same time the teachings and postulations of Darwin's followers and apostles.

As early as 1849—in his "Movement in Favor of Unity in Scientific Medicine," Virchow claimed the origin of life to be a mechanical necessity. In an oration delivered in 1858, a year before the publication of Darwin's "Origin of Species"—printed in a pamphlet containing "Four Orations on Life and Disease" (Berlin, 1862)—he pointed to the changeability and transmutability of species as a necessary basis for the mechanical theory of life. Thus, he was by no means unprepared for *Darwin's* theories. But he knew—and nobody knows it better than Darwin himself—that the transmutability of species, the battle for existence, the theory of selection, even the doctrine of inheritance, were by no means Minerva's springing from the head of Jupiter, unprepared and unexpected. For Goethe and Lamarck were not unknown, and the term of self-preservation was a stock in trade of the biology of bygone times. And nobody knows better than Darwin and Virchow, that hypotheses are not facts, problems not articles of creed, and the exaggerated generalizations of enthusiastic pupils not the outgrowths of superior minds. On the other hand, much of what was twenty years ago the fear and anxiety of many men and women, has greatly settled down as established facts. Twenty years ago

the pulpits teemed with attacks on Darwin and what was called his monkey-theories, mobs gathered to stone public lecturers, and extra hells were heated to consume him and his followers. For did he not intend to annihilate the belief in everything that was sacred, even Judaism and Christianity themselves? Was not religion based on the certainty that the world was created five thousand and seven hundred years ago—some thousand years after they enjoyed established civilizations in China, the East Indies, and Egypt—and was it not known that the monkey was constructed on Friday, and man on Saturday?

Many, most of you, remember the time quite well—it has not passed away entirely—when strong expressions were used concerning and against, the theories of Darwin and his pupils and collaborators. Many, however, are aware also that some of these pupils and collaborators fell into the same errors of expression and behavior we have to complain of in their opponents. Whoever was not with them totally, and in all their *conclusions*, was considered to be against them. And in this respect no illustrious man had to suffer more from the exaggerations of zealotism on the part of really scientific men, than Virchow.

A number of public meetings of several of the annual congresses of German physicians and naturalists, mainly those of Munich and Cassel, were taken up with a dispute principally between Virchow on one side, and Haeckel and Klebs on the other. It is mainly Haeckel to whom the popularization in Germany of Darwin's ideas and theories are due. Himself distinguished by original researches, and an enthusiastic scientist, imbued with the instinctive belief that science must fertilize individual and public life, his sustaining Darwin and his theories have greatly contributed to making what has been called Darwinism the intellectual property of most educated Germans. But in one of his public speeches he insisted upon the theories on selection being admitted among the subjects to be taught in the public schools of the most elementary character. It was to

this that Virchow objected, on the ground that only established facts and results, and not theories, should be taught in schools. To this objection it was due that he was overwhelmed with reproaches. It was said that the man was so taken up with work of all kinds, that embryology and Darwinism were sealed books to him, and that he to whom—it was true—science owed so much, was to be pitied for his advancing age, which prevented his keeping up with his former pupils, who now stood on his shoulders enjoying a larger mental horizon. These attacks on the part of Haeckel, and mainly of Klebs, are not pleasant reading. There is more eagerness and bitterness in them than we desire to meet with in scientific productions and strifes, or have ever met with in any words penned by Virchow.

There is a peculiar undercurrent to this controversy which is but rarely visible on the surface, but at the same time is readily recognized by a careful observer. To understand it, it must be remembered that German higher education is mainly classic, and irrespective of religious or anti-religious views or tendencies. The latter certainly are in the majority. Statistics do not prove that in any country and among any people, virtue, vice, and crime depend upon the presence or absence of positive creeds, be they Judaism, Christianity, or any other form of belief; but among other influences on the amount and nature of education and training. Even the anti-semitic persecutions in modern Germany have their cause, not in the prevailing influence of the Christian religion, but in the absence of schools; for it is a statistical fact that those Pomeranian and Mecklenburg districts, in which Jews are killed and Jewish windows broken and stores robbed, are less supplied with schools, and can less boast of mastering the mysteries of reading and writing, than any other part of the land of Bismarck.

Thus, it will be admitted that the mainly classic education and agnostic tendencies of the higher classes of Germans do not debar them from being good students, good men, and honest friends and enemies. But, after all, Hellenism and Latinism

were human too, and Greeks and Romans hated and loved, scolded and praised, kicked and kissed, like people before and after them. There were zealots among them, too. Socrates was killed because he believed differently from other people, on the plea, however, that he subverted the State, as two thousand years afterward, the Church burned a hundred thousand adversaries. Something reminding of that has occurred in the land of free thought and profound philosophy lately. Haeckel, the classic scholar, the thorough philosopher, the original worker, is aggrieved at Virchow's not seconding all his propositions, favoring all his plans, agreeing with all his opinions and methods. There is one peculiar trait in Haeckel, too, which is rather uncommon in a German savant. His studies have been mainly in embryology and biology. His religious views are of a negative character. He believes that these ought to be strongly stated, contrary to those who think and write, that creed, faiths, and religion have nothing to do with scientific researches. With these he differs. When his book on Evolution carries him to the conclusion that there is no need of a personal God—just as Laplace said he did not require that hypothesis—he not only expresses that conclusion in strong words, but devotes a whole chapter to it. But others are of the opinion that the finding of truths and expounding them has nothing to do with the fighting of opinions and articles of faith, and that religious controversies must not form a part of scientific books. This opinion Virchow has shared all his life. More than thirty years ago (*Ges. Abh.*, p. 6) he wrote as follows :

“ Faith does not admit of a scientific discussion, for science and faith exclude each other. Not to such an extent, however, that one of them renders the other an impossibility, but in such a way that within the range of science there is no place for faith, and the latter can commence only where the former ends. It need not be denied that, if this boundary line be respected, faith *may* have actual objects. It is not, therefore, the domain of science to attack

faith or its objects, but its duty is to mark and consolidate the present termination of knowledge."

Such is his position this very day in regard to this question, and thus it is that much of the bitterness of feeling which appears to be engendered by strong anti-religious feelings almost as much as it is known to have generated ferocious persecutions and atrocious wars of religion, has been spent on him. He has borne it placidly, but we have to be sorry for the fact that he could not be spared it. If there is anything in science, that something is its influence in elevating, refining, humanizing, and the scientist ought to be, and will be, the very apostle of humanism. As science clears the brain, so it ought to purify the heart. Knowledge, logic, reason, ought to go hand-in-hand with feeling, sympathy, and fellowship. Let me dismiss, then, the controversy, commenced in an evil hour by a man otherwise great and good, by again quoting Virchow, who has remained true to what he expressed more than thirty years ago in the following words (*Ges. Abh.*, p. 7): "Humanism, in its true meaning, is no apotheosis of mankind—for that would be anthropomorphism—but the scientific knowledge of the manifold and various relations of the thoughtful individual man to the ever-changing world. *Its* base is the science of nature, its very expression anthropology. For that reason humanism is neither atheistic, nor pantheistic, for, in regard to everything beyond the reach of actual knowledge, there is but one formula: *I do not know* (as Liebig said, the science of nature is modest). Humanism is neither spiritualistic nor materialistic, for to *it* constancy of force and constancy of matter are facts of equal significance, and the unity of man's nature is a settled conviction. It is neither grossly egotistic nor sentimentally self-sacrificing, for, while recognizing the claim of everybody else upon existence and full development, he must demand equal rights for himself."

The humanism so well described by him, Virchow has lived up to. In his early political efforts, which necessitated his removal from Berlin to Würzburg, he showed his sympathy with the oppressed

mass of the people; in his famous papers on the famine-typhus in Silesia and in the Spessart he showed his appreciation of the necessity of radical changes in the position of the neglected and starving members of society. Thus, you observe that, while engaged in professional researches, which, in regard to universality, novelty, and reforming power, are surpassed by those of none whose name is immortalized in the history of medicine, Virchow never ceased to feel that he did not only belong to abstract science, but to his people; and again, as his science has always a practical aim and result, so his political and social views have a practical bearing. He was born one of the people, and a friend of the people. He need not turn politician; he was a politician born. We, in this our country, are often in danger of forgetting that at one time, at least, the most intelligent, wise, and pure men of this nation of ours were our foremost politicians. Men of courage, character, and genius guided the rising star of the republic through the night of despair, and the ship of state through the storms of strife and battle. Without the controlling sympathy of the very best, the Constitution of the United States would not have seen the light, and could not have been sustained to its approaching centennial anniversary. We have since descended, sometimes, to the fear that only a second-class intelligence and a third-rate morality make a successful and eager politician, losing sight of the fact that Aristotle already defined man as a "political being," and insisted upon the labor of all in the interest of all.

In many communities a politician is considered a man whose character is not above suspicion, morals doubtful, and social integrity shaky. If, however, there be any truth in this, the fault is neither in politics, nor in the politician or office-holder, but in us who feel so indifferent about our own and public matters as to close our eyes when watching is required, and to bemoan the result of an election instead of once appearing at the polls. When we happen to find a man of genius and integrity in a high or low public office, we are more apt to wonder how he came

there, than to feel the necessity that our offices should be filled by just such men only. Virchow's example should teach, particularly young medical men, that thorough science and good citizenship do not exclude each other. Indeed, there is nobody so removed from the midst of his fellows, so absorbed by abstract studies, but has interests in common with the rest of mankind; and nobody so raised above the level of his kind but can and ought to contribute to the elevation of his nation or race by personal contact and the attendance to daily duties. These twenty-two years Virchow has been a member of the administration of the city of Berlin. In his place as an "alderman" he has given his attention to the minutiae of city government. A number of his papers, written within this period, treat of subjects of hygiene, drainage, canalization; and while they point to local necessities and improvements, they give the scientific reader copious material of general importance and new ideas. His regular re-election to the same place, his elevation to the vice-presidency of the board, prove two things: first, that his efforts in the direction of turning science into practice are appreciated by the population of his city; and secondly, that he is not tiring of keeping up his contact with his fellow-citizens, of feeling his obligation to the commonwealth, and acknowledging his duties to his neighbors; and that much, as the Scriptures have it, is demanded of the man to whom much is given.

But more. A man of his attainments can be made useful in a wider sphere; a man of his sense of responsibility will shoulder more important duties. Since 1862 he served in a constant succession of terms as a representative of the people of Berlin, in the Prussian Lower House. In this capacity he acted as a member of finance and other committees, always ready to work, to learn, and to teach.

However, to go into his history as a politician would require a review of Prussian and German politics. This may be said only, that, though he be not at all a brilliant speaker, his words are always list-

ened to with attention, his wisdom is always honored, his courage and moderation are always admired. It is not necessary to add that he sides with the party of liberal views and progressive tendencies, and is in constant opposition to the one man who, through nearly twenty years of oppressive measures, dissolution of parliaments, governing without the assent of the representatives of the people, sudden changes both of economical and ecclesiastical policy and party affiliations, brutal assaults on the rights of individuals, the freedom of the press, and the principles of the constitution, though he succeeded in throwing into the lap of the Prussian reigning family an addition of large territories, and gaining for Germany a partial unity, has done more than any German man in history to emasculate German politics and demoralize the public conscience. I am no prophet, but this I predict: when that man of iron and blood will have closed his career, no sorrowing fifty millions will drape their doors, as we did a week ago, and feel that every household has been bereaved, as we then felt. A seat in high politics will be vacant, but no place in the hearts of the people will need to be filled. Bismarck has not found a more persistent and conscientious adversary than Virchow through all his parliamentary career. In regard to the latter I will predict that among the German politicians who resisted, to the utmost, the lawlessness of absolutism, and claimed that law should be supreme, the rights of citizens respected, the officeholders know and live up to their duties, the constitution be carefully guarded and protected, and peace not rendered so expensive and exhausting as war, Virchow's name will, for all time, be mentioned among the first and wisest and purest.

Did time permit, I would fain go into particulars: his contributions to the legislature on infectious animal diseases; on fisheries; his participation in the debates and legislation on the arbitrary expulsion of Jesuits; of his introduction of the term "Kulturkampf"—battle for culture—in connection with the dissensions between Bismarck and the Pope, which commenced with the boast of the former

that he would not go to Canossa, and ended with the victory of the latter four weeks ago; his many lectures for workingmen's societies; his superintending, with Prof. Holtzendorff, the fortnightly publication of a number of series of popular lectures; his supervising the erection of public hospitals and the first barracks; his conducting the first sanitary train into France during the Franco-German war, and his serving as an officer in the army auxiliary societies centred in Berlin.*

When he first became noted in politics the admirers of his genius became anxious concerning the influence politics might exert on the rest of his labors. There were those who predicted that politics meant the closing of his scientific career, and others—not rarely those who owed him their education, first ideas, and positions—jealous of the great king's powers, who supplied the cartmen with jobs while he was building—as Schiller has it—took it for granted that he could not even keep up with the rapid strides special branches of science were making through their and others' efforts. But the facts point the other way. Since he almost filled the first volume of his *Archiv* with his introductory "On the Standpoints in Scientific Medicine," and his researches "On the Development of Cancer," and "On Pathological Pigments," and an "Essay on the Reform of Pathology and Therapeutics by Microscopical Investigations," almost no volume has appeared to which he has not himself contributed. Many of his papers are elaborate and lengthy, and would, if written by most others, according to the habit prevailing in Germany, have swelled the number of pamphlets and books published with independent title-pages, instead of forming parts of journals. Gigantic work like that performed by him in his first twenty years cannot continue forever; one new era created cannot be replaced by another by one man. If he had done nothing since besides writing his occa-

* One of the latest cable news speaks of Virchow as one of the speakers in a public meeting held in memory of James A. Garfield,

sional reviews and summaries, such as, "Old and New Vitalism" (vol. ix.); "Our Programme" (vol. l.); "War and Science" (vol. li.); "On the Stand-points in Scientific Medicine" (vol. lxx., 1877, thirty years after his first article in the *Archiv*); "The Nature and Causes of Disease" (vol. lxxix.), he would have deserved the thanks of the medical world. That he has done more, we know. Some remarks of his own in regard to the subject are found in the preface to his first volume on tumors, and are very characteristic. He says :

"The dates of many of my lectures will prove that even on those days on which important matters claimed the attention of Parliament, I have attended to my duties as a teacher. To set at rest the anxiety of my friends, I will add that the silent and often unnoticed labor of a scientist requires more energy and greater effort than the activity of the politician, which is both noisier and more speedily appreciated. The latter has appeared to me often to be rather a recreation than otherwise."

Of such "recreations," as Virchow calls them, he has, however, more than one. His practice among the forlorn herdsmen of Asia Minor is an instance.

Schliemann, by whose modern witchcraft holy old Troy is just leaving its tomb, invited Virchow to aid him in his work of discovery of the buried city. He went—partly to aid, partly, as he says, to escape from overwhelming labors at home, only to be engrossed in just as hard work, though of a different nature. In regard to the latter, Schliemann's recent book on *Ilios* contains some very interesting material. But what has engaged my attention and interest most has been to observe the humanity and indefatigability displayed by the great man in the service of the poor and sick. To read of his constant practical exertions in behalf of the miserable population of His-sarlik, how he taught the aborigines the efficacy of chamomile and juniper, which grow about them, unnoticed and unused, in rare abundance; how a spring he laid open for archæological purposes has been called by them the physician's well, and is believed to

have beneficial effects ; how he was, on leaving the neighborhood, loaded with flowers, the only thing they had and knew would please him, has charmed me intensely. To admire a great man for his professional labors, eagerly undertaken and successfully carried out, is a great satisfaction to the scientific observer ; to be able to love him in addition, for his philanthropy and warm-heartedness, is a feast of the soul.

On this platform, and on the seats in front of me, there are masters of our profession, not a few known wherever medical science and art are appreciated, studied, and practised. There is, however, none among them but has learned from the great genius whose name I have so often mentioned in the course of this hour. There are practitioners here, learned, shrewd, successful ; every one of them uses the terms invented, knows the theories proposed by the same powerful mind. Those who are young have grown up under the shadow of this tree ; those who are old have been taught by him to look through his eyes and follow his methods. Schools have been overturned by his efforts, science and scientific method reign supreme. The last dangerous doctrine of the crases of the blood, so long upheld by Rokitanski, belongs to the past. Pathology is, since and through Virchow, founded on the smallest organism—the cell—and is, as Huxley but recently proclaimed it, nothing but that branch of biology which treats of peculiar disorders of cellular life, or of the co-ordination of cell-complexes, that give rise to every vital process. We cannot to-day read a medical book or monograph without Virchow's name being inscribed on many pages. When it is not mentioned, it is because the facts have become as self-understood, almost, as a mathematical axiom or an occurrence in history. There are hundreds of journal articles in our literature commencing with the phrase, "Virchow says." Modern medicine without his name cannot be written. They belong together. Nevertheless, I repeat, his is not a school. His methods are simply scientific, based on facts and

leading to facts. Schools are built on ingenious ideas, which are not based on facts and experiments. It is not probable, I cannot imagine, that after the schools of Broussais and Brown and Schönlein, and that of Vienna, there will be another one. Our school, the school of the future, is scientific medicine. The greatest glory of Virchow, for all time, is that he was too great to establish one, and too universal to ask us to *jurare in verba magistri*. All of us, old, or young, knowingly and unknowingly, are his pupils. The young men who to-night enter upon the study of medicine will hardly be taught a chapter in pathology which does not exhibit the impress of his genius.

Was I right in presenting, as an ideal pathologist, this man to the old and young engaged in medicine, and particularly those here this evening? Virchow has done enough to immortalize his name by his researches and the progress medicine has made through him. His rank in the history of medicine is assured. Among archæologists, also, he ranks high. The Anthropological German Society made him president after the first year of its existence. Schliemann calls him to Troy to avail himself of his superior knowledge. Numerous discoveries among old tombs, and valuable essays, are due to him. His scientific mind and exact methods prove as successful in archæology as in pathology. Even purely historical researches, like those undertaken of late on the battle-field of Fehrbellin, owe him their success.

His position in politics, his participation in all humane endeavors, I have alluded to. No longer is he to us only the man of pure science, but also the practical statesman and philanthropist. Moreover, he is the practitioner of medicine among the poor, like the best and noblest of us, as also, for the rank and file of the practitioners of medicine, he is the model of a professional brother and colleague. He is one of the most assiduous and regular members of the local medical societies, participating in scientific discussions, and serving the common interests of the profession. The same spirit of human-

ism and solidarity which presses him into the service of the city and country, makes him an active associate of the medical community. Too often do we meet the contrary. Those who have risen and advanced, partly through their own efforts, partly, however—and not very rarely—through the favor of their fellows, are too apt to forget that they are but branches of the same tree. In our own midst we notice too frequently, that those whose co-operation and example would make them the most desirable members, keep away from the societies of the county, State, and others. The individualism and egotism of the industrial period of the nineteenth century, so rife among the manufacturing and commercial classes, threatens to invade the medical profession to an undue extent. There is no man, however, who sacrifices more time, and does more work to foster professional feeling and brotherhood, than Virchow. Hardly any of the great scientific national and international associations and congresses takes place without Virchow being present. No question arises where universal knowledge and the weight of a great name are required, but his voice is heard. But lately, in London, he raised it in favor of protecting and saving the physiological experiment.

Both his universality and urbanity, as also his sense of justice, are of peculiar interest to us, the American profession. Many are the occasions on which he expressed his appreciation of the republican autonomy of the medical men in this country, of the efforts on the part of medical societies in behalf of the suppression of quackery, and also of the scientific results of American medical labor. Let me quote but one passage from an oration delivered on August 2d, 1874, "On the Progress of Military Medicine." Virchow says (page 6):

"The French army lost, in the Crimean war, thirty-three per cent. of its men, viz., 95,615. Of this number, 10,240 were killed on the battle-fields, and about as many died of their wounds in the hospitals. More than 75,000 men died of infectious diseases. In the American civil war 97,000 died of their wounds,

and 184,000 perished of infectious and other diseases. What a vast amount of pain and misery! What an ocean of blood and tears! And besides, what a number of errors, mistakes, and prejudices! It is not necessary to now enumerate the long list of blunders and sins. They are so well known as to serve in the future as warning examples.

“Let me say here that it was not misfortune alone that showed where the cause of the evil was, and then provided aid. If the French learned little or nothing in the Crimea, and the Americans so much in their civil war as to create a new era in military medicine, the explanation is not to be sought for in the immensity of misfortune and misery undergone by the Americans, for they did not suffer any more than the French did in the Crimea. The explanation is in the critical and thoroughly scientific spirit, the clear perception, the sound and practical common sense which penetrated gradually every part of the American military administration, and which, with the astounding co-operation of an entire nation, accomplished more humane results than any great war ever produced before. Whoever studies the copious publications of the medical staff of the American army, must again and again be astonished at the vast experience collected in them. Absolute accuracy of details, the most painstaking statistics, acquaintance with all branches of medical learning, and a comprehensive style, are united in them for the purpose of collecting and preserving, in the interest of the present and future generations, the new knowledge so dearly bought.”

So says Virchow.

Thus, we have in him a man who has done more for pathology than any single dead or living man. He has been foremost in raising, when the time was ripe for it, medicine to the dignity of a science, with purely scientific methods. He has served his country as he did science, and humanity as he has his country. Was I right in speaking of him in the first hour of your medical studies, young men, as the ideal of a medical man, and a man? There is

but one thing I have to add—it is this: that, as a rule, biographies are written, and held up to admiration and imitation when great men have long completed their labors with their lives. Let us rejoice that Virchow's biography is not completed yet, and that he will, I hope, long live to contribute to medical science, as your teacher and the teacher of your teachers.

PROSTITUTION AND SYPHILIS IN LIVERPOOL.

THE WORKING OF THE CONTAGIOUS DISEASES ACTS AT ALDERSHOT,
CHATHAM, PLYMOUTH, AND DEVONPORT.

By FRED. W. LOWNDES, M.R.C.S. Eng.,

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As during the late Parliamentary session it was decided for the third time, and by an overwhelming majority, that the much-abused Contagious Diseases Acts should not be repealed, the present time seems favourable for reconsidering a question which has been asked before—"Should these Acts be extended to the civil population?" Logically there would appear to be no difficulty in answering this question in the affirmative, for surely if legislative measures are found beneficial, they cannot be extended too widely. And that these Acts have been beneficial, no one who has read dispassionately the reports of the recent debate can doubt. As, however, all real progress in this country has hitherto been gradual, the suggestion contained in the last report of the Association for Promoting the Extension of the Contagious Diseases Acts

seems judicious:—"Under present circumstances, we do not aim at so wide and immediate an extension of the Acts as before, but the case of certain seaport towns not subject to the Acts, which are known to be hot-beds of disease introduced by sailors of the merchant service of our own and of foreign countries, is so glaring, and is attended with such disastrous consequences, that we feel it our duty to call for the special interference of Parliament to repress the evil."

Leaving other seaport towns to be dealt with by those who are in a better position to describe them, I will give briefly some facts and figures respecting prostitution and syphilis, etc., in this large town, and then give a short account of what I saw recently at Aldershot, Chatham, Plymouth, and Devonport of the Contagious Diseases Acts and their results.

The borough of Liverpool, as seen on a map, is of oblong shape, its length being 4·7 miles, its breadth 2·3 miles. Within this space is a population estimated in the middle of 1874 at 510,640, and daily increasing. There is a very large floating and ever-changing population and 50,000 may be reckoned on as the number of seafaring men present at any time; but this number is subject to great variations, as a fair wind may bring in as many as 150 vessels in one day. Foreign seamen of every country are to be met with here, and to be found as patients in our different hospitals.

Extent of Prostitution.—The following very elaborate tables are extracted from the last annual report of Major Greig, C.B., the Head Constable of this borough:—

TABLE XI. *gives the Number of Brothels and Prostitutes known to the Police, in the Month of September, 1874; also the Number of Houses of Accommodation, Houses where Prostitutes lodge; also a Comparative Statement of Brothels and Prostitutes for Ten Years.*

DIVISIONS	Brothels known to the police, kept by		Houses of accommodation.	Houses where prostitutes lodge, not brothels.	Number of prostitutes.	Men residing in brothels.
	Males.	Females.				
North Town.....	21	220	20	11	619	50
South Town.....	17	200	3	21	637	19
Total.....	38	420	23	32	1256	69

RETURN OF BROTHELS FOR TEN YEARS.										
DATE.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.
North Town.....	322	302	392	416	421	423	363	242	298	241
South Town.....	401	425	453	373	399	407	305	223	218	217
Total	723	727	845	789	820	830	668	465	516	458

RETURN OF PROSTITUTES FOR TEN YEARS.										
DATE.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.
North Town.....	1004	1248	1059	1158	1172	1266	990	584	857	619
South Town	1247	974	1417	1061	1077	1184	732	616	524	637
Total	2251	2222	2476	2219	2249	2450	1722	1230	1381	1256

Commenting on the above, Major Greig remarks:—"Table No. 11 gives the number of brothels and prostitutes known to the police, also a comparative statement for ten years. Formerly the census was taken, in accordance with instructions from the Home Office, on the first Tuesday in April; but as these classes of houses and persons are now struck out of the Government return, this return was not made until September 29, and only relates to the prostitutes known to the police (exclusive of those in gaol) to be within the borough on that night. Brothels, 458; prostitutes, 1256—a decrease in the former of 58, and in the latter of 125. This decrease may be accounted for by the removal of many persons keeping houses of this class from streets in the vicinity of West Derby-road. The memorandum of instructions, issued in 1871, respecting this class of houses, has continued to be strictly carried out, proceedings having been taken in most cases 'where young girls were kept or robberies were committed, where they were of notoriously bad character and had become a public nuisance, where they were opened in a respectable street or leading thoroughfare, and where they were complained of by two or more of the inhabitants of the street, who were prepared to substantiate their complaints in court.' Many of the keepers of these houses have been removed by the police, and others on complaint by the inhabitants, without the necessity of proceedings being taken in the police-court."

TABLE XII.—*Showing the Number of Prostitutes taken into Custody, and Summarily Convicted, for being Disorderly in the Streets, during the year ending September 29, 1874; showing also the Number of Times for each during that period.*

Number of times.	TAKEN INTO CUSTODY.								Total persons.	Total arrests.
	Number not known to have been in custody prior to Sept. 30, 1873.				Number known to have been in custody prior to Sept. 30, 1873.					
	13 to 15.	16 to 18.	Above 19.	Total.	13 to 15.	16 to 18.	Above 19.	Total.		
	13 to 15.	16 to 18.	Above 19.	Total.	13 to 15.	16 to 18.	Above 19.	Total.		
Once	2	38	260	300	...	25	644	669	969	969
Twice	11	89	100	...	12	405	417	517	1034
Thrice	31	31	...	9	285	294	325	975
Four	5	15	20	...	7	217	224	244	976
Five	2	3	5	...	6	124	130	135	675
Six	6	6	...	1	65	66	72	432
Seven	1	4	5	...	4	45	49	54	378
Eight	2	1	3	...	..	22	22	25	200
Nine	2	2	...	..	15	15	17	153
Ten	4	4	4	40
Eleven	8	8	8	88
Twelve...	6	6	6	72
Thirteen	1	1	1	13
Fourteen	2	2	2	28
Fifteen...
Sixteen
Total	2	59	411	472	...	64	1843	1907	2379	6033

Number of times.	SUMMARILY CONVICTED.								Total persons.	Total convictions.
	Number not known to have been in custody prior to Sept. 30, 1873.				Number known to have been in custody prior to Sept. 30, 1873.					
	13 to 15.	16 to 18.	Above 19.	Total.	13 to 15.	16 to 18.	Above 19.	Total.		
	13 to 15.	16 to 18.	Above 19.	Total.	13 to 15.	16 to 18.	Above 19.	Total.		
Once	1	10	22	133	..	18	607	625	758	758
Twice	5	33	38	..	8	314	322	360	720
Thrice	11	11	..	4	245	249	260	780
Four	1	6	7	..	5	164	169	176	704
Five	6	6	..	2	90	92	98	490
Six	5	5	..	..	53	53	58	348
Seven	23	23	23	161
Eight	1	1	..	..	22	22	23	184
Nine	1	1	..	1	7	8	9	81
Ten	7	7	7	70
Eleven...	1	1	1	11
Twelve...	2	2	2	24
Thirteen
Fourteen	1	1	1	14
Fifteen...
Sixteen
Total	1	16	185	202	...	38	1536	1574	1776	4345

Table No. XII. (see page 7) gives some idea of the behaviour of prostitutes in the streets, and of the proportionate amount of juvenile prostitution.

Major Greig makes the following comments on this last-named table :—"Table No. 12 gives the number of prostitutes taken into custody and summarily convicted; 2379 persons, 6033 arrests; 1776 persons convicted, and 4345 convictions. A large proportion of these were taken into custody under the Vagrant Act, and charged with being idle and disorderly. This has conduced to better order in our great thoroughfares."

These figures must, of course, not be considered as representing the whole number of prostitutes, but only those well known to the police on a certain day, and, as will be seen, the great majority are in brothels. In so large a community every variety of prostitute is to be seen, from those who live in good houses and in a luxurious style, to the wretched creatures who are to be found in the very lowest brothels, which constitute a considerable proportion of the above. During the years 1870 to 1872 I had charge of a parochial district in the northern part of the town, in which are a large number of these dens of infamy. Three streets of considerable length were then and are now almost entirely composed of what are regularly termed the "black men's brothels," the male frequenters being the numerous negroes who act as stewards, cooks, or seamen on board ships. The unhappy girls who minister to the sexual gratification of these brutes are (as a Roman Catholic priest well acquainted with the district informed me) chiefly those who are the most virtuous in their own country—viz., Irish girls. Though under shelter, and comparatively well clad, the social degradation of these women is fearful, and when they become the subject of disease, which under such circumstances is inevitable, this is frightfully

aggravated by neglect. I was on several occasions applied to for an order for the parish infirmary for women who were in such a state of disease that they could no longer pursue their calling—could, in fact, scarcely move,—in addition to being destitute. Some find their way to the Lock Hospital, some to the North Dispensary (which is near), but I have reason to believe that many prefer to obtain medicine and local applications from neighbouring chemists. There are also a large number of very low brothels in the southern part of the town, in close proximity to the Sailors' Home, where the male frequenters are of a similar class, and the women in an equally degraded condition. Any description could only convey a very faint idea of the sights to be met with in these localities: the revolting countenances of the men, the shameless demeanour and language of the women, are enough to cause a shudder even to those whose professional duties oblige them to be familiar with such sights.

In this town, as elsewhere, brothels have a tendency to congregate in certain localities. As we advance eastwards, the general appearances of the brothels and their inmates improve, though here and there a street much resembling the "black men's" quarters is to be seen; and in the north-eastern part are many brothels, varying in character from the lower to the better class. Much vigilance is required on the part of the police, as, were it not strictly watched, and disorderly conduct at once checked, the whole line of route would be quite impassable. Still further eastward are the abodes of women who live by themselves or in couples, receiving their male friends at home—or houses of accommodation. These latter do not seem so numerous here as in London and elsewhere.

On careful consideration, I am of opinion that the whole number of prostitutes in Liverpool exceeds two thousand.

There is much migration among them between this town Manchester, and other neighbouring places ; still, a considerable number are to be seen year after year continuing their avocation, though changing their residences pretty frequently. But let us take the number actually known to the police in September, 1874, as our starting-point, then ascertain the probable ratio of disease among them, and see what is the hospital accommodation provided. The prostitutes known to the police numbered 1256, and the ratio of disease among the newly registered women under the Acts varied from 35 to 38 per cent., and in some places was as high as 50 per cent. This would give a minimum of 439 cases of disease, and a maximum of 628, excluding altogether cases not known to the police.

From inquiries I have made among professional friends, considering the fearfully diseased state in which women enter the Lock Hospital and the venereal wards of the workhouses, and taking into account also the diseased state of many seamen on their arrival ashore, I am satisfied that the ratio of 40 per cent. is not at all excessive, and that at least that proportion of Liverpool prostitutes are in a state of disease. But we will take the lower figure of 35 per cent., and this would give, for a total of 1256 prostitutes, 439 as diseased. Thus, at the very lowest calculation, there are upwards of 400 prostitutes, more or less diseased, in our midst, plying their trade at the risk of aggravating their own sufferings, and infecting, not only the men, who are truly the victims of their own licentiousness, but, indirectly, innocent women and children, who have done nothing to merit such a fearful scourge.

The only voluntary hospital which receives females suffering from syphilis is the Lock Hospital, which contains fifty beds, half being allotted to each sex. The Royal Infirmary,

when first established in 1745, received patients suffering from all kinds of diseases, including venereal, and when the old infirmary was found inadequate, and the present building completed in 1824, two wards were set apart as female, and two as male venereal wards, the whole number of beds in them being about fifty. When, later on, further enlargement became necessary, it was decided to place all venereal patients in a separate building, and under a separate medical staff, and the present Lock Hospital was completed in 1833, with a total of fifty beds, and on a site in close proximity to the Infirmary and School of Medicine. At that time the total number of beds in the Infirmary and Lock Hospital combined was about 270; hence the proportion of beds devoted to venereal patients was a liberal one, and even now that the two institutions contain 320 beds, the proportion (nearly one sixth) is larger than in any metropolitan hospital. The committee of the Royal Infirmary deserve the greatest credit for establishing and maintaining this hospital in spite of obstacles which would scarcely be credited. Good, pious men have gravely asserted that the hospital encouraged immorality; and yet now, strange to say, the cry from these very same people is that more voluntary lock hospitals are required, but that Acts for the prevention of disease are not. The number of female patients admitted fluctuates considerably, and in a series of fifteen years, 1860 to 1874, I find that the highest number was in 1864 = 222, and the lowest in 1874 = 144. Every kindness and consideration is shown them, and it is greatly to be regretted that the voluntary system is so unsuccessful. As we have seen, there must be at least twenty most suitable candidates for every empty bed walking the streets; and yet there are, while I write (October 14), half the available beds empty. The patients are mostly prostitutes, their

ages varying from eighteen to nineteen; their average stay in hospital is five to six weeks. Their state on admission shows a great want of cleanliness and considerable neglect, the disease evidently being of days', and even weeks' duration; gonorrhœa and simple sores are rarely seen, the majority of the cases being severe forms of syphilis, primary, secondary, or tertiary—separately or combined. As it is a voluntary hospital, they can leave when they like, but the majority stay till they are cured; those leaving uncured do not exceed 10 per cent. of the whole number. Besides these, many females suffering from syphilis, gonorrhœa, etc., are admitted into the three workhouse infirmaries of the parishes of Liverpool and West Derby and of the extra-parochial township of Toxteth-park. I have been permitted, by the kindness of the medical officers, to visit the wards and see the patients of each, and can speak in terms of the highest praise of the management of all. The power given to guardians and masters of workhouses, by the late Poor-law Amendment Act, of detaining all persons suffering from contagious diseases until cured, is strictly enforced at these three in all cases of venereal disease, and with great advantage. It would be very interesting to know whether these powers are universally enforced, as is very desirable. But, of course, the majority of females in workhouse venereal wards are admitted, not because they are suffering from venereal diseases, but because they are paupers; and from this fact alone we might expect to find, as we do, that the state of these women on admission is always severe, and often quite appalling. Enormous condylomata and warts, buboes of some weeks' standing in each groin, immense rupial crusts all over the body; these and similar cases are to be seen in our hospital and workhouse wards, and testify very strongly to the benefits which the unhappy women them-

selves lose from want of periodical inspection and earlier admission.

The medical officers have kindly procured me the numbers of patients admitted in the Liverpool Workhouse during the last two years; in the West Derby and Toxteth Workhouses during the last four years.

The cases of venereal disease treated in the Liverpool Parish Infirmary (venereal wards) during the two years preceding July 15, 1875, were—males, 671; females, 659; total, 1330. Dr. Alexander, the visiting surgeon, in sending me the above says, "These numbers include those only about which there can be no doubt."

During the four years 1871-74, 75 males and 105 females were admitted into the venereal wards of the West Derby Union Infirmary, and, during the four years preceding July last, 16 males and 58 females were admitted into the Toxteth Workhouse Infirmary. Though the numbers of these latter are small, the cases are very severe, and, taken with the Liverpool Workhouse and the Lock Hospital, the number of male patients admitted in all averages about 640 annually; that of females 547. Whether this preponderance of male over female patients is peculiar to Liverpool, I am unable to say, but I think a glance at the above figures will show how completely the voluntary system has failed so far as this town is concerned.

Though much has been done of late years to improve the condition of merchant seamen, both British and foreign, by means of sailors' homes, missions to seamen, savings banks, etc., much more practical good was done, it must be confessed, by means of the river police, lately established, who suppressed boarding-house crimps and other land-sharks. Still, "Jack ashore," as described by Marryat and other authors, remains

much *in statu quo*, doing his duty fairly, reckless of danger when on board, but, with enforced sobriety and continence, looking forward to the time when he can have his fling ashore, which he does among the lowest of prostitutes, and in the lowest of public-houses, till, in a few days, the accumulated wages of many months are gone, and he ships again for a foreign country, too often in a state of disease. While attention is being drawn to "our seamen" and unseaworthy ships, it might not be amiss to include in the inquiry "unseaworthy men," of whom there are many taken on board and shipped under the utterly misleading title of "able seamen." "Disabled seamen" would be much nearer the truth, and it is greatly to be hoped, in the interests of humanity, that our merchant seamen may have, before long, a little of the same consideration shown towards their welfare that is now being shown to their more fortunate brethren of the navy. Hundreds of ships leave the Mersey every year which do not carry a surgeon, though the crew may be a large one; hence the paramount importance of having some arrangement by which merchant seamen can be subjected to medical inspection before proceeding on a long voyage. Now that so many foreign ports are protected by Acts similar to those in force at Portsmouth, Plymouth, etc., it is not creditable that such large seaports as Liverpool, Bristol, Hull, etc., should remain as they are, hot-beds of disease, and that our merchant seamen should be the means of re-importing to foreign countries this loathsome disease.

In the Lock Hospital the excess of male over female patients is much more marked than in the Liverpool Workhouse; in the others, females predominate. We have very severe cases of syphilis in all its forms. Cases of gonorrhœa, except when complicated with syphilis or buboes, are comparatively rare.

No out-patients are seen at this or any of the hospitals except the Eye and Ear and Children's Infirmary. At both these institutions the results of syphilis are frequently met with. In another paper I propose to describe briefly what I saw of the working of the Contagious Diseases Acts at Aldershot, Chatham, Plymouth, and Devonport.

THE WORKING OF THE CONTAGIOUS DISEASES ACTS

AT ALDERSHOT, CHATHAM, WINDSOR, PLYMOUTH, DEVONPORT,
AND STONEHOUSE.

By FRED. W. LOWNDES, M.R.C.S. Eng.,

Surgeon to the Liverpool Lock Hospital.

BEING anxious to learn something from personal observations of the working of the Contagious Diseases Acts, I took advantage of a recent visit to London to see the Lock Hospital in Westbourne-green, which receives patients from the protected districts of Woolwich and Greenwich. I also visited Aldershot, Windsor, Chatham, and subsequently Plymouth and Devonport. All of these places are under the Acts, and I was enabled, by permission of the Inspector of Certified Hospitals, to see the arrangements made for the periodical examinations, the hospitals, and other provisions for their successful working. As many of these are common to all the protected districts, I will note these first, and afterwards those of more special local interest in their respective districts.

The Hospitals.—I was greatly struck with one circumstance

which presented itself very strongly in each hospital—viz., the number of empty beds. Formerly these hospitals, even with a gradually increased number of beds up to their present total, were too small, and the most severe cases had to be selected and admitted. But the work done has for some time been telling, and venereal diseases are being gradually stamped out of all these districts. The following summary will show this. The first column shows the total number of beds, the second those occupied at the date of my visit:—

	Total.	Occupied.
London Female Lock Hospital } (Government Side) . . . }	76	23
Aldershot	100	37
Chatham	68	23
Royal Albert Hospital, Devonport .	162	44
<hr/>	<hr/>	<hr/>
Totals	406	127

This is a great encouragement to those who advocate extension of the Acts, as it removes one very formidable objection—that of expense. It is not necessary to erect large permanent Lock hospitals; a small one will suffice, with temporary wards at first for the large proportion of diseased prostitutes which will always be found in any unprotected district on the first introduction of the Acts. Another very remarkable circumstance, which at once arrested my attention, was that, with the exception of one or two at each hospital, all the patients were able to be up and about, suggesting that the great majority were suffering from very mild forms of disease, which proved on inquiry to be the case. I was informed that cases of secondary and tertiary syphilis are now comparatively rare; gonorrhœa and simple sores comprise the greater proportion, with now and then a case of primary syphilis. The most scrupulous cleanliness and order prevailed in all the hos-

pitals ; the patients were most respectful in their demeanour, and, considering who they were and from whence they came, I could not help contrasting their appearance with the wretched creatures I have described in my last paper as haunting the lower parts of this town, and (as I feel sure) to be found in all scaports. As I went through these hospitals I asked myself the question, "But for the greatly maligned Contagious Diseases Acts, where would these women be?" Where indeed! For we might have waited long for voluntary efforts to provide even the hospital buildings and beds; while as for maintaining them in anything like proper efficiency, this would have been hopeless. And even had this been done, voluntary efforts could never have brought these women in soon enough, nor always induced them to stay long enough. If, therefore, these Acts had done nothing else except provide hospital accommodation in something like proportion to its requirements, they are deserving of the greatest credit. But, as we shall see, they have done a great deal more.

In all the hospitals there is a chapel, which, without excessive adornment, is made to resemble a chapel, and is not, as is too often the case in hospitals, merely a room where prayers are said. The efforts of the chaplain and matrons, in inducing inmates to abandon their present mode of life, and to return home to friends or enter a refuge, are attended with the greatest success; and though the duties of the medical officers are necessarily of a more strictly professional nature, yet their assistance in the work of reformation is of no small importance, and many an "unfortunate" owes her restoration to the paths of virtue to the kind words spoken in the examination-room.

The arrangements made for the periodical examination were most complete—calculated to insure the most perfect privacy, and with every regard to the feelings and comfort of the women.

The waiting-rooms at Aldershot, Chatham, Plymouth, and Devonport are large and thoroughly convenient, and the first object observed was a large notice, explaining fully how each woman might obtain her release from the examination by applying to the visiting surgeon; who, if satisfied by inquiry that she had abandoned prostitution, would direct that she should be relieved from further periodical examination. In the examining-room I found every arrangement for securing sufficient light; ample means for the perfect cleansing and disinfecting of instruments; the couch on which the women are placed is made comfortable with cushions, while so arranged as to afford at once, and without difficulty, a perfectly satisfactory view of the genitals. The rule which permits no one to be present except the nurse is absolute, and I was informed previously that I could not witness the examinations, at which, knowing the importance of this rule, I did not expect to be present.

At Aldershot there were on the day of my visit 200 women on the register, and of this number Dr. Barr informed me forty-three came up for examination on that day, of whom only seven were found diseased, six with gonorrhœa, one with a soft sore which was healed in less than a week. Dr. Barr also stated that there was very little difficulty in getting the women to come up for examination; that they presented themselves much cleaner and tidier than formerly, and that they thoroughly understood that the examination and detention in hospital were for their benefit. He also informed me of a circumstance which I can very readily believe—viz., that the most severe and almost the only severe cases of disease came from unprotected districts. The hospital, though not originally built as such, is most complete in all its details, and everything is done for the moral as well as the physical welfare of the patients during their detention in hospital. There

were only thirty-seven patients in on the day of my visit, not one of whom was confined to bed ; and the cases were, with the exception of one recent arrival, of the mildest form. As the hospital is in close proximity to the camp, Dr. Barr is easily enabled to learn from time to time the extent of venereal disease among the troops stationed there, and in a letter I lately received from him he informed me that in a strength of 12,000 men there had only been three cases of primary sores admitted into the military hospitals during the first week of the present month of November.

The Female Lock Hospital, in Westbourne-green, receives (as is well known) both voluntary and Government patients. Formerly, the latter came from many distant places ; since the end of the year 1873, only those from Woolwich and Greenwich have been received. Partly from this circumstance, partly also from the diminution of the disease which has taken place in all the protected districts, and which proves very conclusively how carefully these Acts have been administered, the numbers on the Government side have been gradually diminishing year by year. Mr. G. H. Bishop, the House-Surgeon, kindly showed me through the Hospital, and gave me every information I required. There were only twenty-three patients on the Government and thirty-three on the voluntary side at the time of my visit, leaving the large number of fifty-seven beds unoccupied on the voluntary, and fifty-three on the Government side—110 in all. This fact is very suggestive as to the respective merits of the voluntary and compulsory systems. It would be perfectly absurd to suppose that the thirty-three voluntary patients represented the whole number who ought to have been there, if it be true, as has been so positively asserted, that, were free voluntary Lock Hospitals established, prostitutes with venereal disease would readily enter them. Here is a free voluntary hospital, with ninety free beds,

only about a third of which are occupied. On the other hand, of the seventy-six Government beds, we find only twenty-three occupied, though the Acts are regularly enforced at Woolwich and Greenwich, and all prostitutes found to be diseased sent here. The fifty-three beds on the Government side were empty because there were no patients for them; the fifty-seven on the voluntary side were unoccupied, in spite of there being within a very short radius of the Hospital (say two miles) many most suitable patients for each empty bed. Were London made a protected district, and the whole of this Hospital available for metropolitan patients, it may be safely predicted that for months to come there would be no empty beds. Mr. Bishop kindly gave me the following statistics of Government patients:—In 1871 there were 422; in 1872, 418; in 1873, 318; in 1874, 283; and in 1875, up to the end of September, 188. In the year 1871, twenty-one patients came from Dover, Deal, and Shorncliffe; in 1872, 106 came from the same places, and also Chatham, Maidstone, Gravesend, and Canterbury; in 1873, forty-six came from Aldershot, Dover, Deal, Winchester, and Windsor. The hospitals at Chatham and Aldershot now receive patients from most of the above places. This Hospital, as we have seen now, only receives from Greenwich and Woolwich. The patients on the Government side were suffering from very mild forms of the disease; and the most severe case I saw was that of a married woman on the voluntary side, the subject of tertiary syphilis of a most advanced form. The greater part of the nose was gone, and she was covered with rupia. Some of the worst cases we have had in the Hospital here have been in married women.

At Windsor there was no Lock Hospital to see, but I had the pleasure of a long conversation with Mr. Pearl, the Visiting Surgeon, who kindly showed me his book giving the

results of the periodical examinations, and gave me other most useful information. During the three months ending June, 1869, there were 125 examinations, and out of these there were seven cases of syphilis and eleven of gonorrhœa. Though subsequently the number of examinations was as many as 174 in a quarter, the cases of syphilis never exceeded eight, nor those of gonorrhœa thirteen in number; while the number of examinations has fallen as low as ninety-eight, the cases of syphilis to one, and of gonorrhœa none. Mr. Pearl and his deputy, Dr. Gooch, with whom I had also an opportunity of conversing, assured me that the physical benefits of the Acts on the women were most marked, and the benefits to the town were so great, as shown by the improved state of the streets, that with very few exceptions all the leading inhabitants signed a memorial against their repeal. The reduction of disease among the soldiers stationed at Windsor is so well known that I need not repeat it here. A very striking proof of the influence of the legislation was shown when it became necessary to suspend the examinations for a month in consequence of an outbreak of small-pox at Windsor. It was obviously desirable not to expose the patients in hospital to the risks to which they would be liable by the admission of patients from an infected neighbourhood, so the Acts were suspended for a month. When the examinations were resumed, there was for some time a marked increase in the proportionate numbers of syphilis and gonorrhœa, which, however, were soon again reduced to a minimum. Considering the proximity of Windsor to London and other unprotected districts, the results of the Acts must be allowed to be very satisfactory.

At Chatham there is a Lock Hospital erected by the Government which contains sixty-eight beds, only twenty-three of which were occupied on the day of my visit. I was kindly

conducted by the Lady Superintendent, Miss Webb, through the Hospital, which has all the advantages of modern construction and the most excellent management. There is a building separated from the Hospital containing two separate wards, each for a single inmate, and these are found very useful in cases of noisy or troublesome patients. A few nights' stay here generally brings them to reason, and they beg to be allowed to return to the larger ward. In voluntary hospitals the only punishment for such conduct is dismissal—a terrible evil, which in some cases is inevitable. Miss Webb assured me that the efforts at reformation, both by the chaplain and herself, were most satisfactory, and that in four years 297 patients were sent to their friends and to homes, and of these only sixty-seven came back. Later on, I saw Dr. Jardine, who, with Dr. Weld, has charge of the Hospital, and conducts the periodical examinations. Dr. Jardine informed me that the reduction of these diseases in Chatham had been most marked, and that the Acts had worked exceedingly well. Their benefits were felt by the civil population as well as by the soldiers and the prostitutes. The Hospital receives its patients from Chatham and its vicinity, Sheerness, Canterbury, Gravesend, and Maidstone. In consequence of patients having been received from an increased area of late years, the numbers have fluctuated, but there is every reason to expect a great reduction in the future. Those for the last four years are—1871, 565; 1872, 676; 1873, 662; 1874, 578. Of the twenty-three patients in hospital on the day of my visit, there was only one who was obliged to keep her bed.

Plymouth, Devonport, and Stonehouse.—Plymouth resembles Liverpool in being a seaport and a maritime thoroughfare, and I was greatly interested to see the working of the Acts in it and the Royal Albert Hospital, which is, I believe, the largest Lock Hospital in the kingdom. I was conducted through it by

Mr. Thom, the House-Surgeon, who most kindly showed me every part, and gave me the fullest information. There are 162 beds, and of these only forty-eight were occupied, the cases being here of a very mild character. The beds had to be gradually increased from thirty-eight up to their present number, and were for some time quite filled. But soon the work began to tell, and three large wards were closed, and will probably not be needed till the Acts are extended to a larger area. For drunken or disorderly patients six comfortable rooms are provided separate from the Hospital, where they can be secluded with safety to themselves and comfort to the other patients. Miss Farrow, the Lady Superintendent, gave me a very satisfactory account of the work done in reforming patients, and stated that any woman who has been in the Hospital and returned to her former mode of life will at any hour be received into the Hospital till such time as a refuge can be found for her. Dr. Archer, the Visiting Surgeon, showed me the examination-rooms, both at Devonport and Plymouth, which were most conveniently situated, the former opposite the Hospital, the latter in a central situation, with a separate entrance for the women. Dr. Archer's description, contrasting the severity of the cases he at first examined with those he sees now, was very interesting, and confirms what all who attend voluntary Lock hospitals must know. So far from the women considering these examinations a hardship, he stated that it was not at all uncommon for a woman to come up before her time voluntarily when she believed herself to be diseased. In the fifteen months, from October 1, 1866, and December 31, 1867, out of 462 women examined, only thirty-one were found free from disease, while now the records show long series of cases without one of disease. As I was very desirous of knowing something of the police arrangements, which have been so especially well con-

ducted here, Dr. Archer introduced me, at my request, to Inspector Anniss, who, in the most civil and obliging manner, showed me his books, many valuable statistics and returns, and also conducted me on a tour of inspection of the streets that evening. As it was my first visit to Plymouth, I could make no comparison between its former and present state; but, from what I have heard from professional and other friends who remember it of old, it must have been worse than the worst part of Liverpool. This much I may say—I could hardly realise the fact that I was in a sea-port. Mr. Anniss showed me numerous dark, narrow streets of small houses, which he assured me were formerly all brothels; now they were as quiet and orderly as could be desired. There were none of those crowds of drunken seamen and low prostitutes which one sees in most sea-ports; and even in those streets where brothels now exist, the most perfect quiet and order prevailed, and no noise nor disorder was to be heard from any of the houses. Formerly there would be nearly a dozen prostitutes in one brothel, and several in one room with their male companions; now brothel-keepers are forbidden to allow more than one woman in a room; and it cannot be doubted that such regulations for these unfortunate women are of benefit. There is always a hope for those in whom a sense of decency can be maintained; but for the drunken prostitute, from whom every atom of decency has been stamped out, there is little or no hope. Much as we may regret the necessity of such regulations, they are at least better than leaving the evil to regulate itself. Mr. Anniss furnished me with the following returns, which, by the kind permission of Captain Harris, I am able to publish:—

Return showing the Numbers of Paupers treated for Venereal Diseases in the Plymouth, Devonport, and Stonehouse Workhouses during the undermentioned period of Two Years.

Period of two years ending Sept. 30.	Plymouth.			Devonport.			Stonehouse.			Total.		Grand Total.
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	
1864..	53	239	292	32	91	123	—	56	56	85	386	471
1866..	29	80	109	16	67	83	—	31	31	45	178	223
1868..	27	54	81	6	44	50	—	33	33	33	131	164
1870..	15	32	47	10	34	44	1	10	11	29	76	102
1872..	13	2	15	5	2	7	—	—	—	18	4	22
1874..	6	3	9	1	2	3	—	—	—	7	5	12

The Acts were first put in force on April 1, 1865, and the gradual and steady diminution will be apparent from the first, more especially after 1870, when the full effects of the increased hospital accommodation and the increased powers of the Acts were felt.

Knowing the error of trusting too much to statistics, and the persistency with which every favourable circumstance resulting from these Acts is challenged by their opponents, I corresponded with the medical officers of the workhouses named as to the above, which they fully confirm. Dr. Thomas, of Plymouth, writes, "During a period of five years, I do not think I have seen three cases of either primary or secondary syphilis, and only two cases of gonorrhoea. I am of opinion that this great reduction is owing to the beneficial working of the Contagious Diseases Acts, which is at present being so efficiently carried out under the superintendence of Inspector Anniss." Mr. De la Rue, of Devonport, urges the importance of applying the Acts throughout England, and to men, where practicable, as well as women. He believes that the beneficial

effects of the Acts would have been much greater if they were more extended. The only cases now seen in the Devonport Workhouse are those of pregnant women. Mr. Leah, of Stonehouse, writes, "I have no recollection of having had any cases of venereal disease in the East Stonehouse Workhouse up to the commencement of the present year. During this year we have had two cases, one of primary, the other of secondary syphilis, in the workhouse, both discharged from the Royal Albert Hospital as being pregnant. So far as Stonehouse is concerned, the figures given by Mr. Anniss are correct; the cases I now speak of have come to us since that return was made. I attribute this satisfactory state of things to the working of the Contagious Diseases Acts. Having held the office of House-Surgeon to the London Lock during the time the voluntary system was in force, and being now on the staff of the Royal Albert Hospital as one of the senior surgeons, I have been able to compare the two systems, and I am certainly in favour of the present Acts." All this is very convincing, but, as it would not have been complete without the returns from the Royal Albert Hospital, Dr. Archer kindly procured these for me.

Year.	Cases.	Year.	Cases.
1865 . . .	245	1870 . . .	1033
1866 . . .	315	1871 . . .	935
1867 . . .	321	1872 . . .	767
1868 . . .	1081	1873 . . .	672
1869 . . .	1536	1874 . . .	680
and up to October 1, 1875		. . .	466.

I need hardly observe that the greater proportion of the above comprise cases which would never have gone to the workhouses nor to voluntary hospitals. It is impossible, therefore, to come to any other conclusion than this: That venereal diseases have been all but stamped out of the three neighbouring workhouses, while it is gradually being reduced in the

Hospital (allowing for fluctuations), although cases of disease constantly come from unprotected districts, of which Exeter is a very notable instance. The number of prostitutes in the three towns, Plymouth, Devonport, and Stonehouse, diminished rapidly on the first introduction of the Acts, and in three years was less than half its former number. Now the registered women number little over 400, whereas in 1865 the number was 1770. During the year 1874, sixty-eight registered women who had been in hospital, and forty-nine who were also on the register, but had not contracted disease, all under twenty-five years of age, ceased prostitution, being a total of 117.

I could add many other proofs of the excellent work which has been done; but I have said enough, I think, to convince most readers that when Sir J. Trelawney called these Acts the most benevolent that have been passed this century, and when Dr. Brewer stated that more good had been done by them in three years than has been accomplished by the united efforts of the religious world in this direction—they were guilty of no exaggeration. I feel that I cannot speak too highly of the manner in which their duties are performed by the medical officers of the hospitals and the visiting surgeons. They all seem to throw themselves thoroughly into their work, which involves much that is very disagreeable, and much that is very monotonous and irksome, such as filling up and signing certificates, making out returns, etc., all of which is, however, well and thoroughly performed. It is evident, also, that their duties are combined with the greatest kindness and consideration to the women who come before them; and to this much of the success I have described is due. The lady superintendents of the hospitals are also deserving of all credit for the interest they take in the future welfare of the patients, as well as for the admirable arrangements of the hos-

pitals, and the efficiency of the nurses, who are quite on a par in intelligence and respectability with those of the best-managed hospitals. To the police all praise is due for the discretion, tact, and humanity with which their very delicate duties are performed. The Government is to be congratulated on possessing such highly efficient officers. In conclusion, I take this opportunity of expressing my most grateful acknowledgments to all the gentlemen I have named for the courtesy and assistance they afforded me on the shortest notice, and without any previous acquaintance; to Captain Harris, for his valuable and interesting reports, and permission to publish the above returns; to Miss Webb, of the Chatham, and Miss Farrow, of the Devonport Hospitals, for much useful information; and to Inspector Anniss, for his civil and obliging conduct to me during the whole of my stay at Plymouth.

